

INTEGRATED AV AMPLIFIER

KA-996

INSTRUCTION MANUAL

KENWOOD CORPORATION

CUSTOMER RELATIONS

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

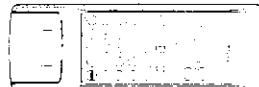
Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If the unit was shipped to you directly, notify the shipping company without delay. Only the shipper can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

Accessories

Remote control unit Batteries (R6/AA)



Contents

Read the pages marked !_ carefully to ensure safe operations.

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Special features

DOLBY SURROUND PRO LOGIC This function allows to enjoy a similar Dolby Surround effect to movie theaters from video software programs carrying the  mark.

DOLBY 3 STEREO

The Dolby 3 STEREO provides an active center channel to produce a better, stable center image. This mode can be used when listening to stereo video program and music or when surround listening or surround system set-up is not possible.

Remote control unit

The remote control unit is provided with this unit.

Before applying power

! Caution: Read this section carefully to ensure safe operation.

Units are designed for operations as follows.

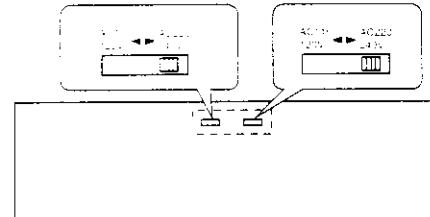
U.S.A. and Canada AC 120 V only

*Other countries AC 110-120/220-240 V switchable

*AC voltage selection

The AC voltage selector switch on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

AC voltage selector switch



Move switch lever to match your line voltage with a small screwdriver or other pointed tool.

Note

Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

Safety precautions

! Caution: Read this section carefully to ensure safe operation.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

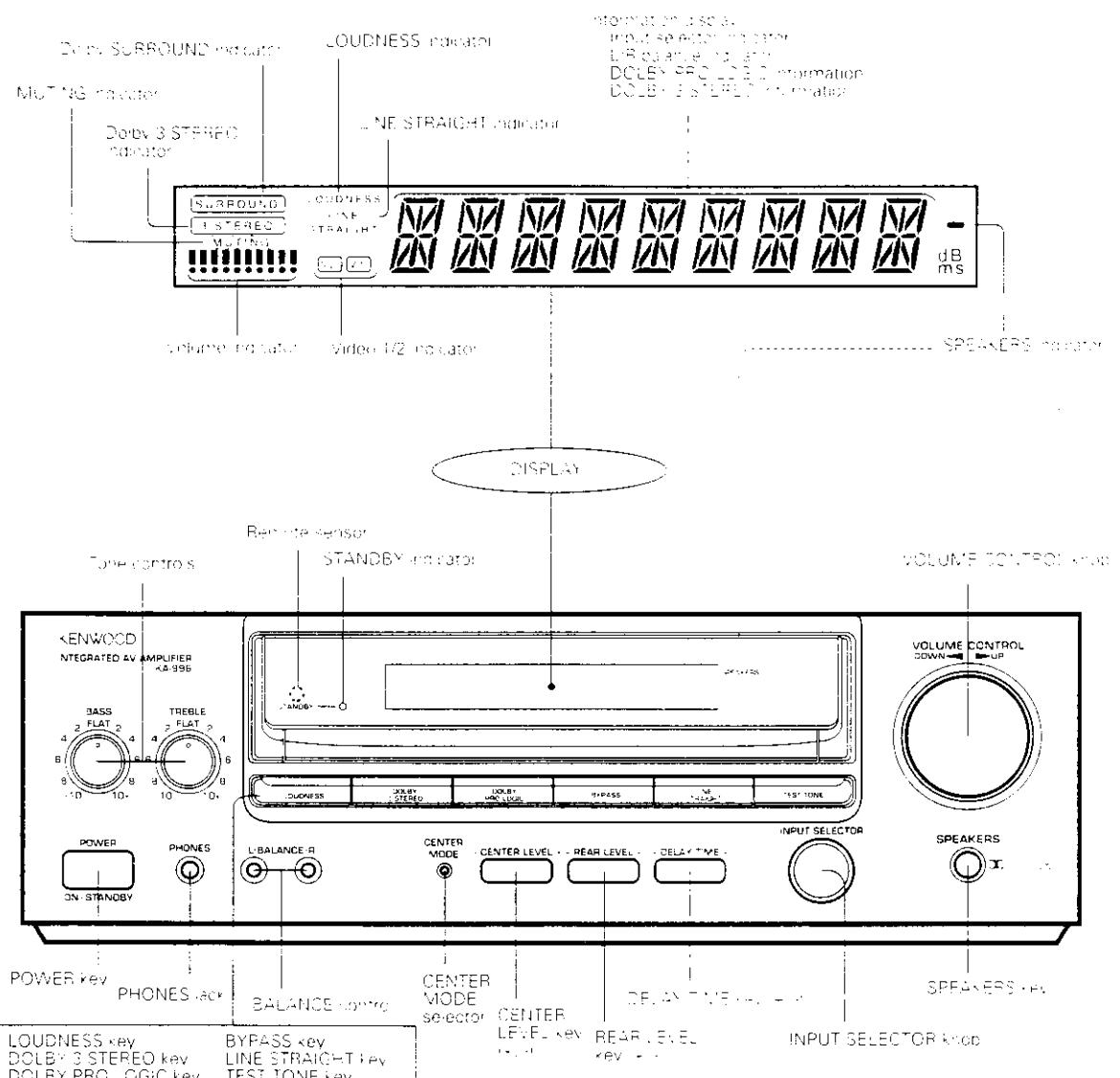


THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS, THE LITERATURE ACCOMPANYING THE APPLIANCE.

Controls and indicators



LOUDNESS key

Human ears are less sensitive to low frequencies when listening at low volume levels. When the VOLUME CONTROL is set to a low position, press the LOUDNESS key to boost the low frequencies.

SPEAKERS key

OFF: This position de-energizes all speakers to permit private use of headphones. Speakers indicator goes off.
ON: Activates the speakers connected to SPEAKERS A terminals on the rear panel. Speakers indicator lights.

STANDBY mode of POWER key

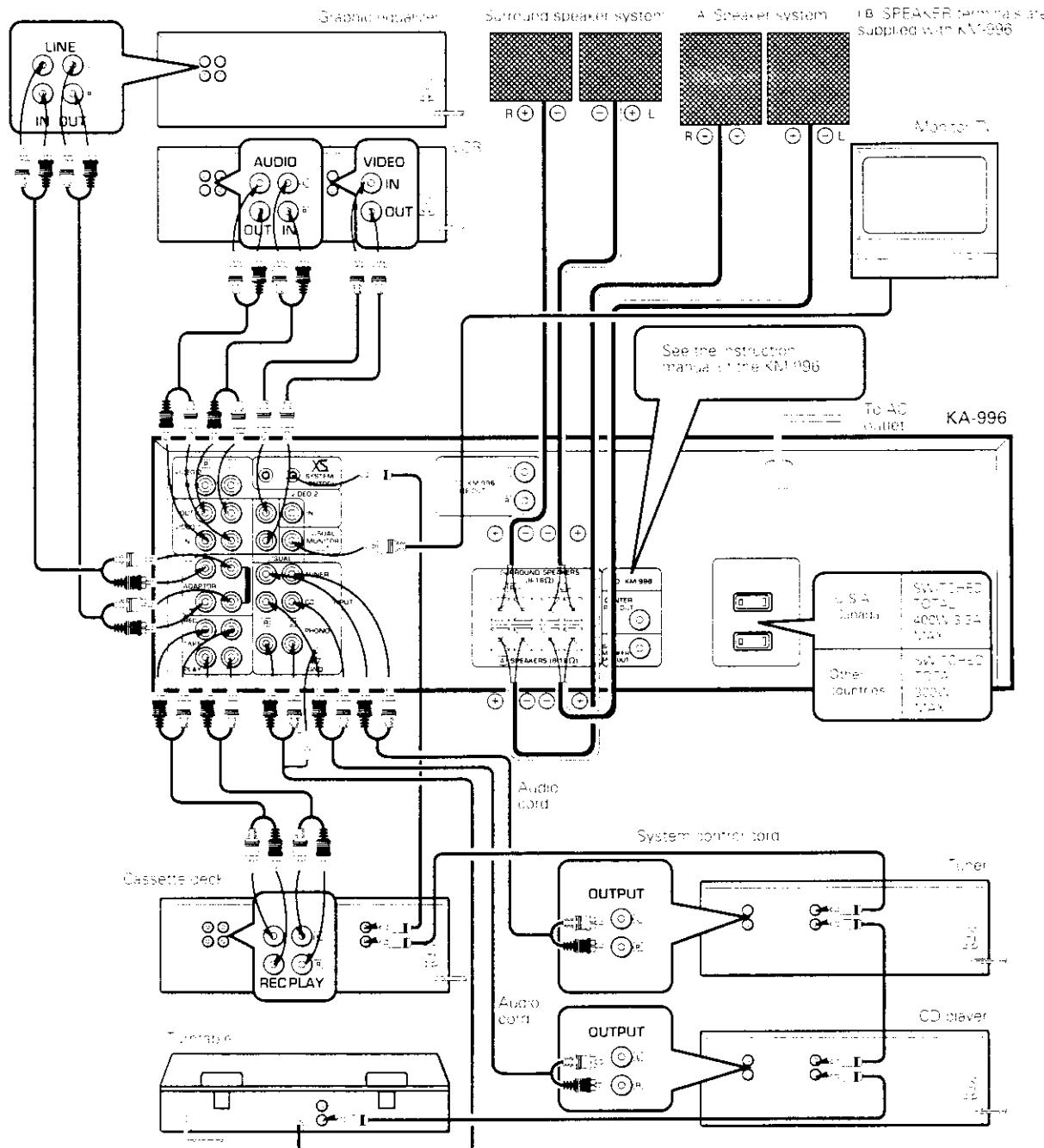
When the power cord of this system is plugged into an AC outlet, the STANDBY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Standby mode. While the STANDBY indicator is lit, the power of the system can be switched ON/OFF from the remote control unit.

System connections

Make connections as shown below. When connecting the related system components, refer also to the instruction manuals of the related components. Do not plug in the power lead until all connections are completed.

Regarding malfunctions of the microprocessor

See "In case of difficulty" to reset the microprocessor if the display indications are distorted or the unit won't operate even though you completed the connections correctly.



Notes

1. Connect all cords firmly. If connections are loose, there could be loss sound or noise produce.
2. When plugging and unplugging connection cords, be sure to first remove the power cord from the AC outlet. Plugging/unplugging connection cords without removal of the power cord can cause malfunctions or damage to the unit.
3. Do not connect up a power source which is larger than that indicated on the socket at the rear of the unit.

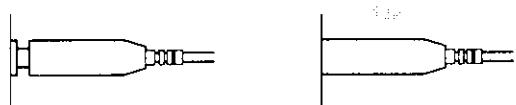
Speakers connection

- 1 Push the lever.
- 2 Insert the cord.
- 3 Lock the lever.



- Twist the end of the cord and insert into the terminal. Be careful not to clamp the casing.

System control connection



- Be sure to insert the system control cord plugs fully into the SYSTEM CONTROL terminals.
- If the system control cord and audio cords are not connected properly, the automatic system governing remote control and system functions will not operate.

SYSTEM CONTROL Operation (This operation is not available for some cassette decks.)

By connecting this unit to other KENWOOD system components equipped with SYSTEM CONTROL terminals, such as a cassette deck, CD player and/or turntable, the following convenient operations will be available.

Automatic play operation

To play the turntable, cassette deck, or CD player connected to this unit, press the desired input selector keys on this unit. The turntable, cassette deck, or CD player will automatically enter play mode.

In the same way, pressing the Play key of the turntable, cassette deck, or CD player will automatically switch the input selector on this unit to the corresponding component.

Synchro recording

To record simultaneously the CD player or turntable onto a tape with the cassette deck, press the CD or PHONO input selector key and a CD or record. Set the cassette deck to record pause mode, then press the Play/stop key of the CD player or turntable. The cassette deck will start recording automatically, synchronized with the CD player or turntable. For more details, refer to the instruction manual of the tape deck.

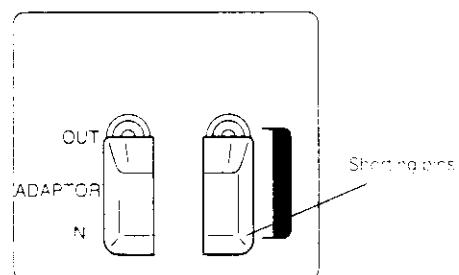
Remote control

When the cassette deck and CD player are connected via the system control cords, these components can be controlled from the remote control unit supplied with this unit.

ADAPTOR jacks on the amplifier rear panel

When an adaptor-type component such as a graphic equalizer is connected, unplug the shorting pins from the ADAPTOR jacks and connect the component to these jacks.

- When the ADAPTOR jacks are not used, be sure to plug the shorting pins into the jacks. Otherwise, the sound will not be produced.
- When the ADAPTOR jacks are used, retain the shorting pins and be careful not to lose them.
- Never plug a shorting pin into other jacks than ADAPTOR jacks. Otherwise, the unit may be damaged.

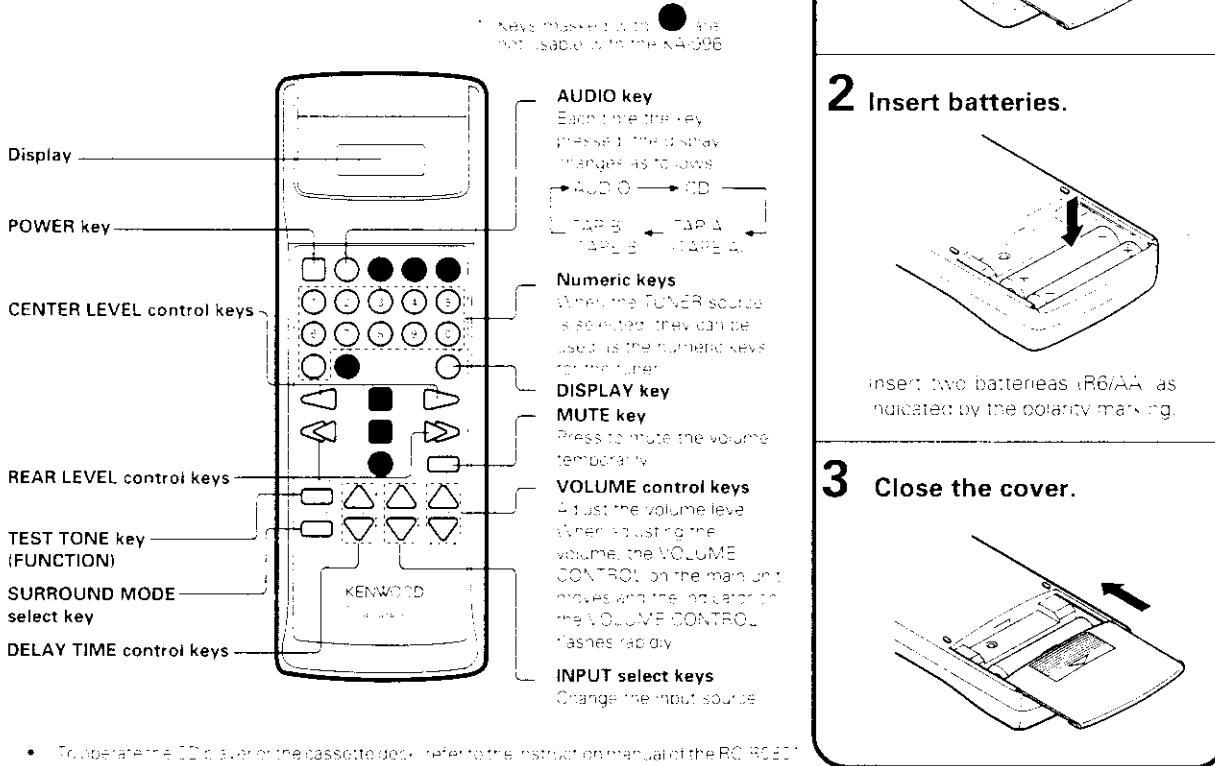


Remote control operation

The provided remote control unit can operate the KENWOOD CD player as well as the cassette deck connected through the SYSTEM CONTROL terminals. It also allows to operate other companies video components by calling the presetted maker code. To call the presetted maker code and operate, refer to the instruction manual of RC-R0801.

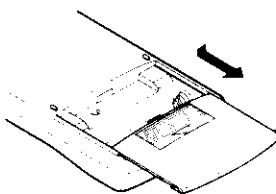
To operate the KA-996

- 1 Press the **AUDIO** key so that "AUDIO" appears.
- 2 Press the **POWER** key to turn on the KA-996.
- 3 Press any key to be operated.

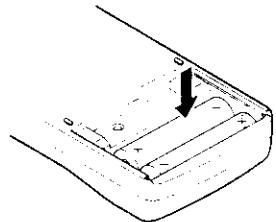


■ Loading batteries

1 Remove the cover.

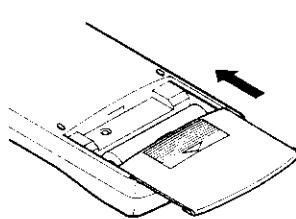


2 Insert batteries.



Insert two batteries (LR6/AA) as indicated by the polarity marking.

3 Close the cover.

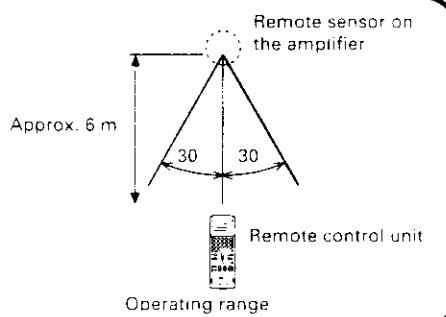


■ Operating procedure

Plug the power cord of the system into an AC wall outlet, and press the **POWER** key on the remote control unit to turn the power on.

When the power is turned on, press the key of the source component to be operated.

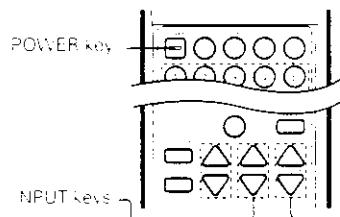
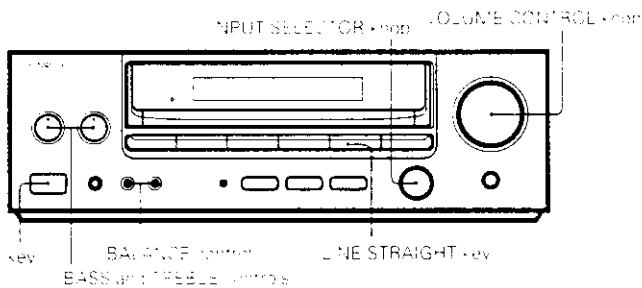
- When two operation keys on the remote control unit are pressed successively, press each key securely reserving an interval of more than 1 second for each press.
- Components connected via the system control cords can also be remote-controlled. In this case, please read the instruction manual supplied with your component.



Notes:

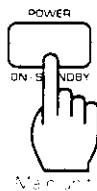
1. The supplied batteries are intended for use in operation checks. Therefore, their lives may be shorter than ordinary batteries.
2. When the remote-controllable distance gets shorter than before, replace both batteries with new ones. (Use LR6 alkaline batteries.)
3. Malfunction may occur if direct sunlight or the light of a high-frequency lighting (fluorescent lamp) enters the remote control light sensor. In such a case, change the system installation position to prevent the malfunction.

Operating instructions

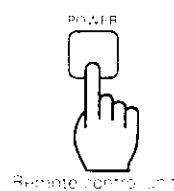
VOLUME
control keys

■ Playing a source

1 Turn the POWER ON.

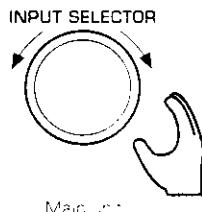


Main unit

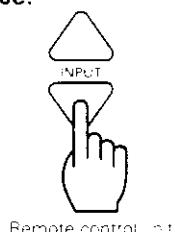


Remote control unit

2 Select the input source.

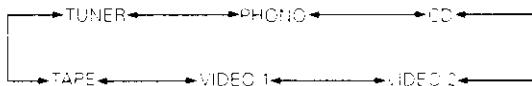


Main unit



Remote control unit

The input selector is changed as follows.



The input changes from one source to the next counterclockwise with the Δ key, clockwise with the ∇ key.

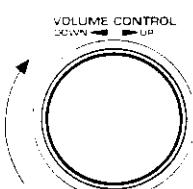
The selected source name appears on the display.

TUNER

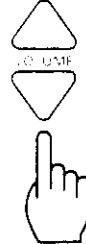
3 Play the source component.

- When the LINE STRAIGHT key is pressed, sound close to pure sound is produced. (The LINE STRAIGHT indicator appears.) When the LINE STRAIGHT key is pressed, tone controls are not available. To cancel this function, press the LINE STRAIGHT key again.
- If you press the LINE STRAIGHT key in the Dolby Surround mode, the Dolby Surround function is canceled.
- The selected source component starts playing automatically if it is connected by a system control cord.

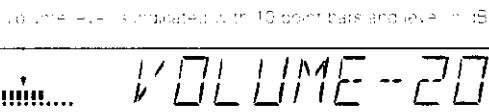
4 Adjust the volume.



Main unit



Remote control unit



5 Adjust the left and right volume balance.

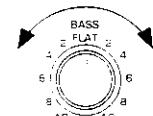
To decrease right speaker volume

L-BALANCE R

To decrease left speaker volume

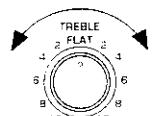


6 Adjust the tone controls.



To decrease bass

BASS



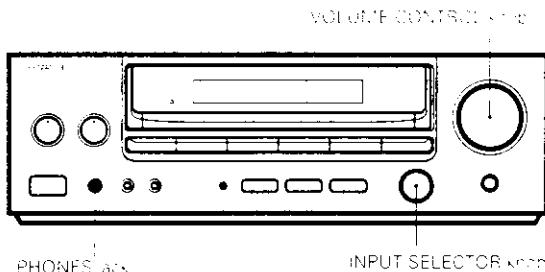
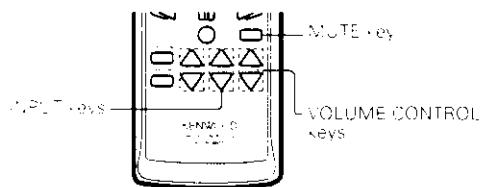
To increase treble

TREBLE

Notes on input selector

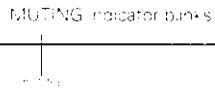
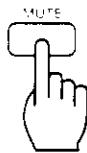
The source last selected with the input selector is backed up for a few days. Even when the power cord is unplugged. After this period, the tuner is automatically selected when the power is turned on.

Operating instructions



■ To mute the sound temporarily

Press the MUTE key.

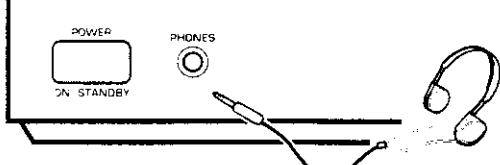


Blinking indicator light

- Pressing the key again resumes the previous volume.

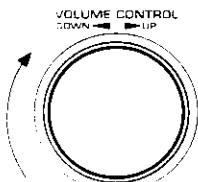
■ Listening through headphones

1 Insert the headphones plug into the PHONES jack.



- Set the SPEAKERS switch to OFF
- When listening through headphones, set the SURROUND MODE to OFF by pressing the BYPASS key.

2 Adjust the volume.

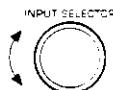


Front panel

Remote control unit

■ Ordinary tape recording

1 Select the source to be recorded.



TUNER

2 Set the cassette deck to the record-pause mode.

3 Play the source component to be recorded and start recording it on the cassette deck.

Note:

The input source cannot be changed over while the cassette deck connected to this unit via the system control cord is in the record mode. When it is required to change the input source, put the cassette deck in the stop mode beforehand.

■ Playback of videotape

1 Switch the power of the monitor TV ON.

2 Select the VIDEO 1 or VIDEO 2 input with the input selector.

VIDEO 1

3 Play the VCR.

4 Adjust the volume.

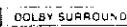
Operation of Dolby surround playback

Surround effect

The powerful feeling of enveloping sound experienced in places such as movie theaters is due to the fact that sound comes from not only in front but also from the periphery. To reproduce this type of feeling, this unit incorporates surround decoder. To extract the maximum surround effect, read this instruction manual thoroughly and adjust the system to match the configuration of your listening room.

Presence

Dolby PRO LOGIC Surround

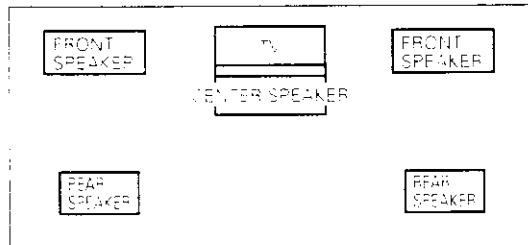
Videotapes and laserdiscs which bear the  mark are recorded with the same Dolby surround data used in movie theaters. Since this unit incorporates a Dolby PRO LOGIC surround decoder, you can enjoy the same acoustic effects experienced in movie theaters in the comfort of your own home.

Dolby 3 STEREO

With widely spaced left and right speakers, the center channel image for off-axis listeners shifts according to seating position. Dolby 3 Stereo localizes the center image regardless of seating position, improving the image over that with conventional stereo.

■ Speaker positioning

Standard layout



Dolby PRO LOGIC mode

Set the center mode according to the size of the center speaker.

NORMAL WIDE BAND

- When the center speaker size is small
- When the center speaker size is large or medium

When no rear (surround) speakers are used



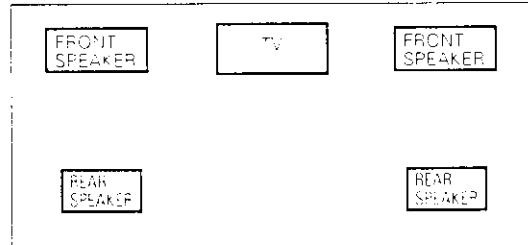
Dolby 3 STEREO mode

Set the center mode according to the center speaker size.

NORMAL WIDE BAND

- When using a small center speaker
- When using a medium-sized or larger center speaker

When no center speaker is used



Dolby PRO LOGIC mode

Set the center mode to PHANTOM.

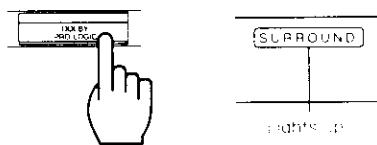
Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,959,590; Canadian numbers 1,004,603 and 1,037,877.

"Dolby", "Pro logic" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

Operation of Dolby PRO LOGIC playback

■ Dolby PRO LOGIC field adjustment

1 Set the Dolby PRO LOGIC mode.



2 Select the center mode.

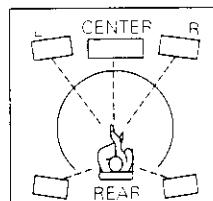


- Refer to column "Center mode" below.

3 Adjust the volume balance.

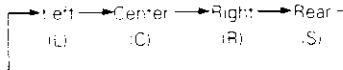
1 Press the TEST TONE key.

A buzzing sound comes from the speaker. It is switched every one-and-a-half seconds for each one.

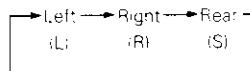


- Press at the listening position.

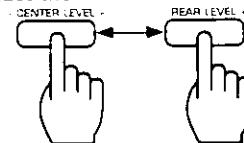
In NORMAL or WIDE BAND mode:



In PHANTOM mode:



2 Adjust the volume balance.



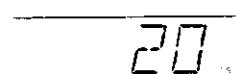
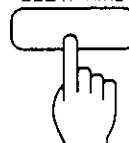
- Adjust so that the test tone volumes are the same on all speakers
- The level being adjusted is displayed.
- The center level cannot be adjusted in the P-ANTON mode

4 Stop generating the test tone.

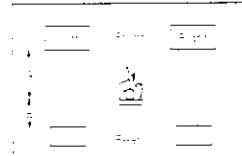


5 Set the delay time.

- DELAY TIME -



- Calculate the proper delay time for Dolby Surround by referring to the illustration below
- The delay time can be adjusted in the range from 15 to 30 ms.
- When the DELAY TIME key is pressed a delay time appears on the display. It varies every time the key is pressed.
15 ms → 20 ms → 25 ms → 30 ms
- If the DELAY TIME key is pressed all the sound is muted temporarily.
- Once a delay time is set, it is automatically held in memory so the same delay time is displayed whenever Dolby Surround is switched ON later.



$$\text{Delay time (ms)} = 15 \text{ ms} + 5 \text{ ms} (A - B)$$

A: Distance of front speaker (m)

B: Distance of rear speaker (m)

Center mode

Select one of the following center modes according to the type of the presence speakers in your system.

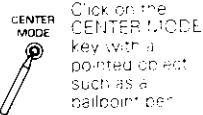
NORMAL : Use this mode with a center speaker of a compact size.

WIDE BAND : Use this mode with a center speaker of a medium or larger size

- If you cannot identify whether your center speaker is of the medium or compact size, try both the NORMAL and WIDE BAND mode and use the one that can provide better sound positioning.

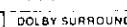
PHANTOM : Use this mode when the center speaker is not used.

- Even without the center speaker, the signal is processed in a simulated manner to ensure proper center image positioning and provide the enjoyment of Dolby Surround.

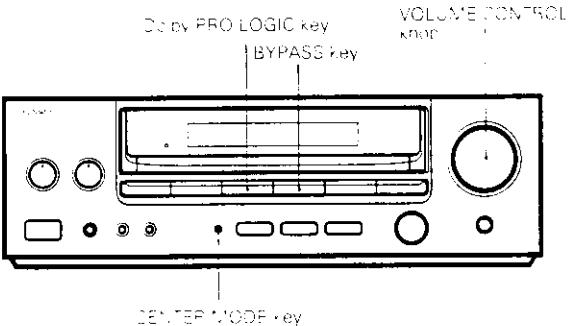


Every time the key is pressed, the center mode is switched.

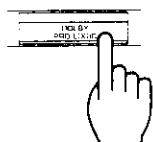
■ Operation of Dolby PRO LOGIC playback

This function allows to enjoy a similar Dolby Surround effect to movie theaters from video software programs carrying the  mark.

Before using the Dolby PRO LOGIC mode, be sure to perform the "Dolby PRO LOGIC field adjustment" procedure.



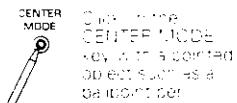
1 Set the Dolby PRO LOGIC mode.



Lights up

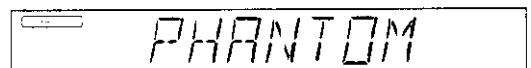


2 Select the center mode.

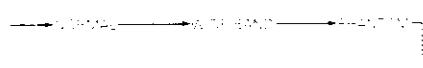


CENTER
MODE
CENTER MODE
key with a center
output set as a
balance center

- Select the mode which has been set in step 3 of the "Dolby PRO LOGIC field adjustment" procedure. Refer to page 10.

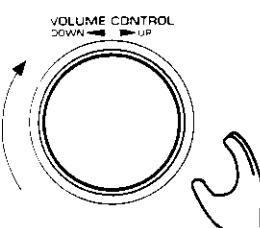


Every time
the key is
pressed, the
center mode
is switched



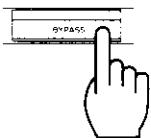
3 Play a software program encoded with Dolby Surround.

4 Adjust the volume and tone.



- When the level balance of center and rear speakers is not good, perform the "Dolby PRO LOGIC field adjustment" procedure again.

To return to normal stereo playback

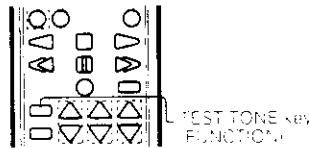


(SURROUND)
goes off



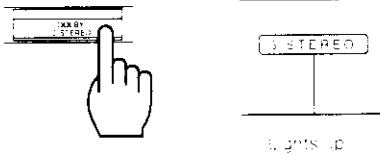
Dolby 3 STEREO Mode

The Dolby 3 STEREO provides an active center channel to produce a better, stable center image. This mode can be used when listening to stereo video program and music or when surround listening or surround system set-up is not possible.



■ Dolby 3 STEREO adjustment

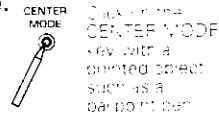
1 Set the Dolby 3 STEREO mode.



2 Select the center mode.

Every time the key is pressed, the center mode is switched.

NORMAL ← WIDE BAND



- Set the center mode to NORMAL if using a small center speaker, or set to WIDE BAND if using a medium-sized or larger speaker.

3 Adjust the center speaker volume.

1 Press the TEST TONE key.

A buzzing sound comes from the speaker. It's switched every one and half second for each other.



- Press at the listening position.
- When at 3 Stereo, sound is produced in the sequence LEFT → CENTER → RIGHT (REAR is not available with 3 stereo mode.)

2 Adjust the volume.

CENTER LEVEL

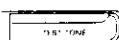


- Adjust so that the level of the center speaker is equal to that of the left and right speakers.
- The rear level adjustment is invalid.

4 Stop generating the test tone.

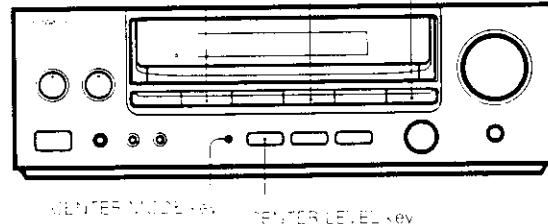
Press the key again.

- Note that the unit can not adjust the delay time.



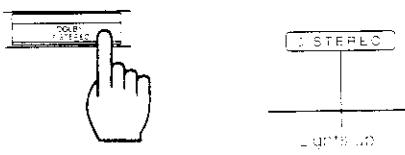
DOLBY 3 STEREO key TEST TONE key

BASS key



■ Dolby 3 STEREO playback

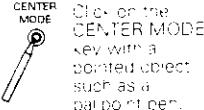
1 Set the Dolby 3 STEREO mode.



2 Select the center mode.

Every time the key is pressed, the center mode is switched.

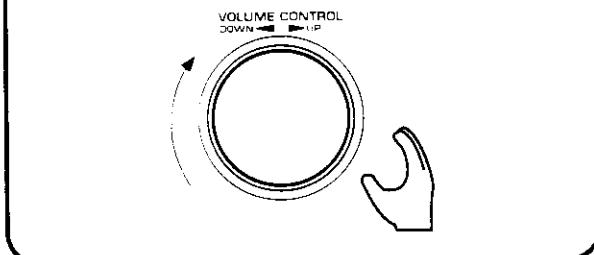
NORMAL ← WIDE BAND



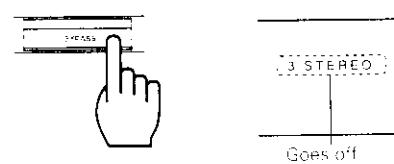
- Set the center mode to NORMAL if using a small center speaker, or set to WIDE BAND if using a medium-sized or larger speaker.

3 Play a stereo software or a Dolby surround program.

4 Adjust the volume and tone.



To return to normal stereo playback.



In case of difficulty

What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

To reset the microcomputer

The microcomputer may malfunction (impossibility of any operation, erroneous display, etc) when a connection cord is unplugged or plugged while the power is ON or due to other external causes. In this case, try the method described below to reset the microcomputer and return to normal operation.

Unplug power cord from outlet and plug it back in while holding down the POWER key

Amplifier section, speakers

Symptom	Cause	Remedy
Sound is not output.	<ul style="list-style-type: none">The volume is set to the minimum position.The muting is set to ON.The audio cords are disconnected.	<ul style="list-style-type: none">Adjust the volume to a proper level.Press the MUTE key to release the muting.Connect them properly.
Sound is not output from one of the speakers.	<ul style="list-style-type: none">The speaker cord is disconnected.The BALANCE control is set to an extreme position.	<ul style="list-style-type: none">Connect it properly referring to 'System connections'.Adjust the Left/Right balance.
A hum noise is generated when the PHONO input selector is selected.	<ul style="list-style-type: none">The audio cord from the turntable is not inserted securely into the PHONO jacks.The turntable is not grounded.	<ul style="list-style-type: none">Insert the audio cord plugs securely into the PHONO jacks.Connect the grounding wire to the GND terminal on the rear panel.
Sound is not output from the Surround rear speaker, or Center speaker or sound is very small.	<ul style="list-style-type: none">The rear speaker cords are disconnected.The surround play mode has not been engaged.The CENTER/REAR LEVEL are set to the minimum level.	<ul style="list-style-type: none">Connect properly referring to 'System connections'.Set the Dolby Surround.Adjust the CENTER/REAR LEVEL controls.

Remote control unit

Symptom	Cause	Remedy
Remote control operation is not possible.	<ul style="list-style-type: none">Batteries are exhausted.The remote control unit is too far away from the main system, control angle is too large, or there is an obstacle in between.The audio cords and the system control cords are not connected properly.The source component to be operated does not contain the analog disc tape(s) or CD.An attempt is made to play a tape which is being recorded in the cassette deck.	<ul style="list-style-type: none">Replace with new batteries.Operate the remote control unit within the controllable range.Connect properly referring to 'System connections'.Place an analog disc, tapes, or CD in the source component to be played.Wait until the recording is completed.

Note

Do not use contact cleaners because it could cause a malfunction. Be specially careful against contact cleaners containing oil, for they may deform the plastic components.

Specifications

! Caution: Read this page carefully
to ensure safe operation.

AUDIO section

Rated power output

STEREO MODE (FTC)

100 watts per channel minimum RMS, both channels driven, at 8 Ω from 20 Hz to 20 kHz with no more than 0.09% total harmonic distortion.

SURROUND MODE

Front

100 watts per channel minimum RMS, both channels driven, at 8 Ω 1 kHz with no more than 0.9% total harmonic distortion.

Rear

20 watts per channel minimum RMS, both channels driven, at 8 Ω 1 kHz with no more than 0.9% total harmonic distortion.

Total harmonic distortion

..... 0.06% (20 Hz ~ 20 kHz, 50 W, 8 Ω)
..... 0.03% (1kHz, 50 W, 8 Ω)

Frequency response

LINE (CD, TAPE, VIDEO)

..... 20 Hz ~ 60 kHz, +0 dB, -3 dB

PHONO "RIAA" response

..... 20 Hz ~ 20 kHz, ± 0.5 dB

Maximum input level

PHONO (MM) 120 mV, 0.5% T.H.D. at 1 kHz

Signal to noise ratio

(IHF'66)

PHONO (MM) 75 dB

LINE (CD, TAPE, VIDEO) 95 dB

Input sensitivity/impedance

PHONO (MM) 3.5 mV/47 kΩ

LINE (CD, TAPE, VIDEO) 200 mV/47 kΩ

ADAPTOR IN 200 mV/47 kΩ

Tone control

BASS ± 10 dB (at 100 Hz)

TREBLE ± 10 dB (at 10 kHz)

Loudness control (volume at -30 dB level)

..... + 8 dB (100 Hz)

Output level/impedance

TAPE REC 200 mV/1 kΩ

ADAPTOR OUT 200 mV/1 kΩ

VIDEO section

Input level/impedance

VIDEO (composite) 1 Vp-p/75 Ω

Input (VIDEO 1, VIDEO 2)

Output level/impedance

VIDEO (composite) 1 Vp-p/75 Ω

Output (VIDEO 1, MONITOR OUT)

GENERAL

Power consumption

For the U.S.A. and Canada 2.3 A

For other countries 210W

AC outlets

For the U.S.A. and Canada

SWITCHED 2 (Total 400W, 3.3A max.)

For other countries

SWITCHED 2 (Total 300W max.)

Dimensions

W: 440 mm (17-5/16")

H: 143 mm (5-5/8")

D: 300 mm (11-13/16")

Weight (Net) 9.3 kg (20.5 lb)

Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

For CANADA DOC REGULATION

"This digital apparatus does not exceed the CLASS B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications."

For the U. S. A.

FCC WARNING:

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment may cause harmful interference to radio communications, if it is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.